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Item 5 of the provisional agenda**

LG/NAIROBI

REPORT ON POLICY MEASURES AND INSTITUTIONS FOR IMPROVED FOREST CONSERVATION, MANAGEMENT AND DEVELOPMENT

Executive Summary

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1. Data from 1985 indicates that the area covered by tropical closed broadleaved forests in Africa is about 210.0 million ha with a rate of disappearance of 1.3 million ha per year. Open woodlands cover an estimated area of 474.0 million ha with a rate of depletion of 2.4 million ha per year in the region. In all Africa, only 1.75 million ha from a total of 163.5 million ha of productive closed forest resources were under management plans by the end of 1980. This is one of the factors which had a negative effect on the management and conservation of the major forest ecosystems in the region. By zones, the evergreen tropical forest resources of the coastal West African countries are the most seriously closed forests affected by disappearance. In North Africa, in spite of the enormous efforts on afforestation and forest conservation, many forest species of genus Quercus, Juniperus and Abies disappear every year as a consequence of forest fires, fuelwood gathering, overgrazing and over-exploitation. In Central Africa, the rate of disappearance of the tropical closed forest resources is the lowest in the region.

2. The East African countries, although poorly endowed, with humid tropical forests, are very rich in savannah formations. Thus, closed broad-leaved forests occupied an estimated area of 21.0 million ha in 1985, against more than 190.0 million ha of savannah woodland in that year. It seems that part of these ecosystems were covered by semi-deciduous tropical forests many years ago. However, these resources play an important role in the economy of the rural population, because they provide them with fuelwood, pastures, mushrooms, medicines, glue and other food products considered essential for their daily subsistence. Many Eastern and Southern African countries have been carrying out programmes of afforestation and reforestation with a view to alleviate the problem of industrial roundwood scarcity. Nowadays in most of these countries there is a surplus of growing stock, mainly from Pinus and Eucaliptus due to the lack of silvicultural plans for their exploitation and conservation, and the low demand by the timber industry.

3. The largest open woodland ecosystem in Africa south of the equator that contributes directly to protecting the closed broadleaved humid forest resources is composed of two main categories: (a) Miombo woodlands with populations of genera Brachystegia, Isoberlinia, Julbernardia, Parinari and Uapaca; and (b) Woodlands that have natural habitat at lower altitudes with population of genus Clophospermum. Miombo woodlands, defined as an open deciduous microphyllous formation, are synonymous to dondo, mikondo and tenda in different countries. This ecosystem which can be considered as being characteristic of the natural forest areas of Angola, Malawi, the United Republic of Tanzania (the mainland) Zaire (Shaba region), Zambia and Zimbabwe, are being degraded in most of these countries by fire, fuelwood gathering, overgrazing, and low rates or regeneration.

4. The estimated area covered by Miombo woodlands in Africa was estimated to be around 190.0 million ha in 1985. This figure represents 40.0 per cent of the area occupied by open woodland forests in the continent. The estimated standing volume of this ecosystem is 4,990.6 million cubic metres. Assuming a cycle of maturity of 60 years and 8.0 per cent of current annual increment, it would be possible to estimate the timber crop that would be available every year to be over 332.0 million cubic metres. Several studies have shown that honey yield under this tree cover could reach more than 30 kg/ha/year. Gathering of fuelwood, mushrooms and livestock are spontaneous activities directly connected with this ecosystem. Unfortunately, no sufficient information exists on the production, basal area, increments and dynamics of regeneration and disappearance of ecosystem.

5. The Economic Commission for Africa, deeply concerned with the rapid destruction of these forest resources and aware of their immense potential as a source of basic commodities, especially for the rural communities, and having also considered the essential role of this ecosystem as a regulator of climatic conditions and a preserver of water resources, launched a study whose main objective was the definition of policies and strategies within a framework for the conservation and development of Miombo woodlands. Though only three countries were covered by the study, namely, Kenya, Mozambique and the United Republic of Tanzania, its findings and conclusions serve to illustrate the general state of deterioration of forest resources in Africa. It is the intention of ECA to extend this investigative study to cover the rest of other endangered forest ecosystems in the region.

6. The Miombo forest resources of the East African countries of Mozambique, the United Republic of Tanzania and Zambia covered an area of about 109 million ha in 1985, with an estimated volume of 2,804 million cubic metres of timber. In 1984, the estimated industrial production from Miombo forests was around 1.4 million cubic metres whereas fuelwood and charcoal reached more than 60 million cubic metres. Brachystegia, Isoberlinia, Julbernardia and Pterocarpus are the main genera representing the system. The exploitation of industrial logs is based on a handful of valuable species and in most of the countries little control of the exploitation exists. There is an apparent gap between forest royalties charged by governments and the selling prices of a cubic metre of timber on the market.

7. It is estimated that about 17 million people, or 42.5 per cent of the population of these three countries, depend directly on these resources. Mozambique has the highest rate of population living in this ecosystem (66.7 per cent). Shifting cultivation is mentioned in the study as being the major constraint to conserving this resource. It is estimated that 45,000 ha of natural forests, most of them Miombo woodlands, disappear each year in Mozambique, 80,000 ha in the United

Republic of Tanzania, due to tobacco curing, and more than 40,000 ha are destroyed by the Chitemene shifting cultivation in Zambia. Fuelwood and charcoal making are still the main activities in the Miombo woodlands. On the assumption of a per capita consumption of fuelwood of 1.7 m^3/year, the three countries would require about 140.0 million cubic metres of Miombo firewood in the year 2010.

8. Livestock grazing, apiculture and wildlife are land uses characteristic of this ecosystem. Thus, in the United Republic of Tanzania about 36 per cent of the total cattle is located in the Miombo woodlands, in spite of infestation by tsetse flies and the lack of policies to harmonize the utilization of this natural resource. Apiculture is another land use very common in this ecosystem. In the United Republic of Tanzania over 25 per cent (more than 5 million people), are directly involved in this activity. In Zambia, only 44 per cent of the potential is utilized. In the other countries there is still a high potential for development of this activity. Wildlife, in spite of poaching, represents an important source of income in the subregion. In Zambia, revenue from hunting by tourists was 1.2 million Kwacha (k) in 1980 1/ In Mozambique, about 1,000 tons of game meat were sold to the local population in 1983.

9. Few silvicultural and management programmes are applied in the Miombo forests at present, whereas these practices were relatively common during the 1960s and mid-1970s. Activities carried out in the subregion include fire protection, wood exploitation, regeneration and thinning of unwanted tree species. Fire control is practically non-existent partly because of lack of manpower. The most common management system - the selection system - selectively cuts valuable species, leaving less marketable and crooked trees in the forests. Regeneration is inadequate at low levels relying mainly on fire-root suckers, natural regeneration and the coppice. In short, although management techniques may be known, present applications do not ensure the production capacity of the ecosystem due to a lack of clearly defined policies at the national and subregional levels aimed at proper development and management of this sector.

10. Lack of trained manpower is considered to be another chronic problem in the subregion, and most of the human resources are employed in wood exploitation and processing, to the detriment of silvicultural and management activities. Thus, in Mozambique, 66 per cent of the total

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1/ $US 1 = K 5.56 in September 1986.

forestry workers are engaged in logging, transport and processing. Furthermore, according to recent studies this situation will probably continue to the year 2000, unless national policies on this sector are changed.

11. Shortage of training facilities and on-the-job training are also permanent problems, and the demand for trained manpower is generally not satisfied by the existing institutes. Plans for strengthening this area, building up new technical schools, as in Mozambique, and/or expanding co-operation at subregional level, e.g., through Sokoine University and Mweka Wildlife College in the United Republic of Tanzania, are also required.

12. There are very few road networks in the Miombo forests of the subregion, and this hinders the control and monitoring of wood exploitation, fires and game poaching. Research is very poor and subregional co-operation must be fostered in this field. Mozambique and Zambia do not have specialized institutions dealing with research which is still conducted by the forestry departments.

13. In order to safeguard and invigorate the Miombo woodlands, the following programmes are proposed:

(a) The carrying out of surveys and forest inventories of the Miombo stands that are particularly endangered by shifting cultivation. This is an urgent need in the Tabora and Lapula provinces of the United Republic of Tanzania and Zambia respectively. Collection of technical basic data is urgently needed for calculation of yields, annual increments and further formulation of management plans of the Miombo stands;

(b) The establishment of a tree planting fund, jointly managed by governments and tobacco farmers to set up a comprehensive reforestation and management plan to halt the destruction of this ecosystem in areas threatened by fuelwood over-exploitation;

(c) The launching of a progressive and general plan to change the present systems of shifting cultivation into a permanent sustained agriculture, under Miombo woodlands cover. This plan, based mainly on cash crop cultivation, should include agro-silviculture and livestock approaches and would require the financial and political support of the governments of these countries;

(d) The initiation of national and subregional campaigns against man-made fires. A first phase would be gathering information on characteristics and causes, assessment of damage and evaluation of current and future resources allocated for this purpose in the subregion to combat this problem and introduce prevention measures;

(e) The carrying out of a comprehensive study to assess the staff requirements in the subregion up to the year 2010 in the areas of research and manpower training;

(f) The undertaking of a subregional Miombo Resources Conservation and Development Plan in order to obtain the financial and technical support, envisaged by FAO in the Tropical Forestry Action Plan, for conservation and rehabilitation of this ecosystem.